

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A backup server for enabling a data communications network to recover from a local server failure, the backup server comprising:
an information packet requester configured to request an information packet from a memory associated with the a network access server (NAS) in response to a call received from the NAS, if the call information is not available to the backup server, the information packet associated with an ongoing call placed by a call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails;
an information packet receiver responsive to the local server failure, the information packet receiver receiving the information packet from a memory associated with a network access server (NAS) ~~an information packet associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails,~~ the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network and providing a network connection to the local server; and
a parser configured to reconstruct ~~for reconstructing~~ the call information from the information packet, such that the backup server maintains the ongoing call to the data communications network.
2. (Previously Presented) A backup server according to claim 1, wherein the call information comprises server-state attribute (SSA) having an attribute/value pair that can be parsed into a plurality of separate data entries.
3. (Previously Presented) A backup server according to claim 1, wherein the information packet further comprises a plurality of aggregated data elements from a call attribute table.
4. (Previously Presented) A backup server according to claim 3, wherein the plurality of aggregated data elements are separated by the parser for reconstructing the call information from the information packet.

5-8. (Cancelled)

9. (Currently Amended) A local server for enabling a data communications network to recover from a failure of the local sever, the local server comprising:
an encoder configured to generate ~~for generating~~ an information packet associated with an ongoing call placed by the call-in user via a network access server (NAS), the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network and providing a network connection to the local server, the information packet containing call information for maintaining connection of the ongoing call if the local server fails; and
a sender configured to generate ~~for transmitting~~ the information packet from the encoder to a memory associated with the NAS, the information packet being stored in the memory to be available to the backup server via an information packet requester associated with the backup server if the local server fails and the information is not available to the backup server.
10. (Previously Presented) A local server according to claim 9, wherein the call information comprises server-state attribute (SSA) having an attribute/value pair that can be parsed into a plurality of separate data entries.
11. (Previously Presented) A local server according to claim 9, wherein the information packet further comprises a plurality of aggregated data elements from a call attribute table.
12. (Previously Presented) A local server according to claim 11, wherein the plurality of aggregated data elements are separated by the parser for reconstructing the call information from the information packet.
13. (Currently Amended) A system for maintaining a call placed by a call-in user to a data communications network, the system comprising:

a memory associated to a network access server (NAS), the NAS configured to couple
~~capable of coupling~~ a call placed from the call-in user to the data communications
network and providing a network connection to a local server;
an encoder associated with the local server and configured to generate ~~for generating~~ an
information packet associated with an ongoing call placed by the call-in user via the
NAS, wherein the information packet containing call information for maintaining
connection of the ongoing call if the local server fails;
a sender configured to transmit ~~for transmitting~~ the information packet from the encoder to a
memory associated with the NAS, the information packet being stored in the memory;
a call coupler associated with the NAS and configured to couple ~~for coupling~~ the call to the
local server if the local server does not fail, the call coupler further configured to couple
~~and for coupling~~ the call to the backup server if the local server fails;
an information packet forwarder configured to transmit ~~for transmitting~~ the information
packet from the associated memory to the backup server if the local server fails, the
information packet forwarder further comprising an information packet requester
associated with the backup server for requesting the information packet from the
memory associated with the NAS in response to the call received from the NAS, if the
call information is not available to the backup server; and
a parser associated with the backup server and configured to reconstruct ~~for reconstructing~~
the call information from the information packet such that the backup server can recover
the call information and serve the call without disconnecting the user from the network.

14-15. (Cancelled)

16. (Currently Amended) A system according to claim 13 ~~14~~, wherein the information packet
forwarder further comprises:

an information packet sender associated with the NAS, and configured to transmit ~~for~~
~~transmitting~~ the information packet in response to a request from the information packet
requester.

17. (Currently Amended) A network access server (NAS) for maintaining a call placed from a
call-in user to a data communications network, the NAS comprising:

a receiver for receiving an information packet from a local server, the information packet associated with an ongoing call placed to the NAS by the call-in user, the information packet containing context data of the ongoing call for maintaining connection of the ongoing call;

an associated memory configured to store ~~for storing~~ the information packet;

a failure detector configured to determine ~~for determining~~ if a failure of a local server has occurred; and

a sender configured to transmit ~~for transmitting~~ the information packet from the associated memory to the a backup server via an information packet requester associated with the backup server if the local server failure has occurred and the information is not available to the backup server, the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network and providing a network connection to the local server.

18. (Previously Presented) A NAS according to claim 17, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair that can be parsed into a plurality of separate data entries.
19. (Currently Amended) A NAS according to claim 17, wherein the information packet further comprises a plurality of aggregated data elements from a call attribute table.
20. (Currently Amended) A server backup system for maintaining an ongoing call placed by a call-in user to a network, the system comprising:
 - a backup server connected to the network, the backup server configured to service ~~being capable of servicing~~ the call;
 - an encoder associated with a server servicing the call, the encoder generating an information packet associated with an ongoing call placed by the call-in user via a network access server (NAS) configured to couple ~~capable of coupling~~ the call from the user to the network, the NAS further configured to provide ~~and providing~~ a network connection to the server, the information packet containing call information for maintaining connection of the ongoing call;

a sender associated with the server, the sender configured to transmit ~~transmitting~~ the information packet to a memory associated with the NAS, the memory configured to store ~~storing~~ the information packet;

a call coupler associated with the NAS, the call coupler configured to roll ~~rolling~~ over the call to the backup server if the server fails;

an information packet requester associated with the backup server, the information packet requester configured to request ~~for requesting~~ the information packet from the memory associated with the NAS in response to the call received from the NAS, if the call information is not available to the backup server; and

a parser associated with the backup server and configured to reconstruct, ~~for reconstructing~~ the call information from the information packet.

21. (Previously Presented) A server backup system according to claim 20, wherein the call information comprises server-state attribute data having an attribute/value pair that can be parsed into a plurality of separate data entries.
22. (Previously Presented) A server backup system according to claim 20, wherein the information packet further comprises a plurality of aggregated data elements from a call attribute table.
23. (Previously Presented) A server backup system according to claim 22, wherein the plurality of aggregated data elements of the information packet are separated by the parser for reconstructing the call information from the information packet.
24. (Previously Presented) A server backup system according to claim 20, wherein the server is a resource pool manager server (RPMS).
25. (Cancelled)
26. (Currently Amended) A server backup system according to claim 20, further comprising: a failure detector associated with the NAS, and configured to detect ~~for detecting~~ the failure of the server.

27-29. (Cancelled)

30. (Currently Amended) A server backup system for maintaining an ongoing call placed by a call-in user to a network, the system comprising:

a first server connected to the network and configured to service ~~for servicing~~ the call;

a second server connected to the network and configured to service ~~for servicing~~ the call if the first server fails; and

a network access server (NAS) configured to couple ~~capable of coupling~~ a call placed by a call-in user to the network and providing a network connection to a server, the NAS coupling the call from the call-in user to the first server if the first server does not fail, and coupling the call to the second server if the first server fails, the NAS including a memory associated therewith,

wherein the first server comprises:

an encoder configured to generate ~~for generating~~ an information packet associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the first server fails; and

a sender configured to transmit ~~for transmitting~~ the information packet from the encoder to the memory associated with the NAS, the memory storing the information packet, and

wherein the second server comprises:

an information packet requester configured to request ~~for requesting~~ the information packet from the memory in response to the call received from the NAS, if the call information is not available to the second server; and

a parser configured to reconstruct ~~for reconstructing~~ the call information from the information packet.

31. (Currently Amended) A server backup system according to claim 30, wherein the NAS further comprises:

a failure detector configured to detect ~~for detecting~~ the failure of the second server.

32. (Previously Presented) A server backup system according to claim 30, wherein the first server is a resource pool manager server (RPMS) and the second server is a backup RPMS.

33-51. (Canceled)

52. (Previously Presented) A NAS according to claim 17, wherein the sender transmits the information packet in response to a request from the backup server.

53-62. (Cancelled)

63. (Currently Amended) A method performed by a backup server for enabling a data communications network to recover from a local server failure, the method comprising:
if the local server fails and if an information packet associated with an ongoing call placed by a call-in user is not available, requesting the information packet from a memory associated with a network access server (NAS) in response to a call placed from the call-in user to the data communications network, the information packet containing call information for maintaining connection of the ongoing call if the local server fails;
receiving ~~the an~~ information packet from ~~the a~~ memory ~~associated with a network access server (NAS)~~ in response to ~~the a~~ local server failure, the NAS configured to couple ~~capable of coupling~~ a call placed from a call-in user to the data communications network, the NAS further configured to provide ~~and providing~~ a network connection to a local server, ~~the information packet being associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails;~~ and
reconstructing the call information from the information packet so as to maintain the ongoing call to the data communications network.

64. (Previously Presented) A method according to claim 63, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair, the reconstructing comprising:
parsing the SSA data into a plurality of separate data entries.

65. (Previously Presented) A method according to claim 64, further comprising:
petitioning to the NAS for the information packet after the NAS requests the call
information; and
sending the call information to the NAS after completing the reconstructing.
66. (Currently Amended) A method performed by a local server for enabling a data
communications network to recover from a failure of the local sever, the method comprising:
generating an information packet associated with an ongoing call placed by the call-in user
via a network access server (NAS), the information packet containing call information
for maintaining connection of the ongoing call if the local server fails, the NAS
configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data
communications network and providing a network connection to the local server; and
transmitting the information packet to the memory associated with the NAS, the information
packet being stored in the memory to be available to the backup server via an
information packet requester associated with the backup server if the local server fails
and the information is not available to the backup server.
67. (Previously Presented) A method according to claim 66, wherein the call information
comprises server-state attribute (SSA) data having an attribute/value pair, the method further
comprising:
encoding a plurality of aggregated data elements from a call attribute table representing the
SSA data; and
delimiting information packet into an attribute data string and a value data string.
68. (Currently Amended) A method for maintaining a call placed by a call-in user to a data
communications network, the method comprising:
generating an information packet associated with an ongoing call placed by the call-in user
via a network access server (NAS), wherein the information packet containing call
information of an ongoing call for maintaining connection of the call if the local server
fails;
transmitting the information packet to the memory associated with the NAS, the information
packet being stored in a memory associated with the NAS, the NAS configured to

~~couple capable of coupling~~ a call placed from the call-in user to the data communications network and providing a network connection to the local server; coupling the call to the local server if the local server does not fail, and coupling the call to the backup server if the local server fails; transmitting the information packet from the memory associated with NAS to the backup server via an information packet requester associated with the backup server if the local server fails and the information is not available to the backup server; and reconstructing the call information from the information packet such that the backup server can recover the call context and serve the ongoing call without disconnecting the user from the network.

69. (Currently Amended) A method performed by a network access server (NAS) for maintaining a call placed from a call-in user to a data communications network the method comprising:
- receiving an information packet from a local server for servicing the call, the information packet associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information of the ongoing call for maintaining connection of the ongoing call if the local server fails, the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network, the NAS further configured to provide ~~and providing~~ a network connection to the local server;
- storing the information packet in a memory associated with the NAS;
- determining if a failure of the local server has occurred; and
- transmitting the information packet from the associated memory to the backup server via an information packet requester associated with the backup server if the local server failure has occurred and the information is not available to the backup server.
70. (Previously Presented) A method according to claim 69, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair that can be parsed into a plurality of separate data entries.

71. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method to be performed at a backup server for enabling a data communications network to recover from a local server failure, the method comprising:
- if the local server fails and if an information packet associated with an ongoing call placed by a call-in user is not available, requesting the information packet from a memory associated with a network access server (NAS) in response to a call placed from the call-in user to the data communications network, the information packet containing call information for maintaining connection of the ongoing call if the local server fails;
- ~~receiving the an information packet from the a memory associated with a network access server (NAS) in response to the a local server failure, the NAS configured to couple~~
~~capable of coupling~~ a call placed from a call-in user to the data communications network, the NAS further configured to provide ~~and providing~~ a network connection to a local server, ~~the information packet being associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails; and~~
- reconstructing the call information from the information packet so as to maintain the ongoing call to the data communications network.
72. (Previously Presented) A program storage device according to claim 71, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair, the reconstructing comprising:
- parsing the SSA data into a plurality of separate data entries.
73. (Previously Presented) A program storage device according to claim 72, further comprising:
- petitioning to the NAS for the information packet after the NAS requests the call information; and
- sending the call information to the NAS after completing the reconstructing.
74. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method to be performed at

a local server for enabling a data communications network to recover from a failure of the local sever, the method comprising:

generating an information packet associated with an ongoing call placed by the call-in user via a network access server (NAS), the information packet containing call information for maintaining connection of the ongoing call if the local server fails, the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network and providing a network connection to the local server; and transmitting the information packet to the memory associated with the NAS, the information packet being stored in the memory to be available to the backup server via an information packet requester associated with the backup server if the local server fails and the information is not available to the backup server.

75. (Previously Presented) A program storage device according to claim 74, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair, the method further comprising:

encoding a plurality of aggregated data elements from a call attribute table representing the SSA data; and
delimiting information packet into an attribute data string and a value data string.

76. (Currently Amended) A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method to be performed at a network access server (NAS) for maintaining a call placed from a call-in user to a data communications network, the method comprising:

receiving an information packet from a local server for servicing the call, the information packet associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information of the ongoing call for maintaining connection of the ongoing call if the local server fails, the NAS configured to couple ~~capable of coupling~~ a call placed from the call-in user to the data communications network, the NAS further configured to provide ~~and providing~~ a network connection to the local server;

storing the information packet in a memory associated with the NAS;

determining if a failure of the local server has occurred; and

transmitting the information packet from the associated memory to the backup server via an information packet requester associated with the backup server if the local server failure has occurred and the information is not available to the backup server.

77. (Previously Presented) A program storage device according to claim 76, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair that can be parsed into a plurality of separate data entries.

78. (Currently Amended) An apparatus for enabling a data communications network to recover from a local server failure, the data communications network including a network access server (NAS) configured to couple ~~capable of coupling~~ a call placed from a call-in user to the data communications network and providing a network connection to the local server, the NAS having a memory associated therewith, the apparatus comprising:

means for, if the local server fails and if an information packet associated with an ongoing call placed by a call-in user is not available, requesting the information packet from a memory associated with a network access server (NAS) in response to a call placed from the call-in user to the data communications network, the information packet containing call information for maintaining connection of the ongoing call if the local server fails;

~~means for receiving the an information packet from the a memory associated with a network access server (NAS) in response to the a local server failure, the NAS configured to couple capable of coupling a call placed from a call-in user to the data communications network, the NAS further configured to provide and providing a network connection to a local server, the information packet being associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails; and~~

~~means for reconstructing the call information from the information packet so as to maintain the ongoing call to the data communications network.~~

79. (Previously Presented) An apparatus according to claim 78, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair, the means for reconstructing comprising:

means for parsing the SSA data into a plurality of separate data entries.

80. (Previously Presented) An apparatus according to claim 79, further comprising:

means for petitioning to the NAS for the information packet after the NAS requests the call information; and
means for sending the call information to the NAS after completing the reconstructing.

81. (Currently Amended) An apparatus for enabling a data communications network to recover from a failure of the local sever, the data communications network including a backup server and a network access server (NAS), the NAS configured to couple ~~capable of coupling~~ a call placed from a call-in user to the data communications network and providing a network connection to the local server, the NAS having a memory associated therewith, the apparatus comprising:

means for generating an information packet associated with an ongoing call placed by the call-in user via the NAS, the information packet containing call information for maintaining connection of the ongoing call if the local server fails; and

means for transmitting the information packet to the memory associated with the NAS, the information packet being stored in the memory to be available to the backup server via an information packet requester associated with the backup server if the local server fails and the information is not available to the backup server.

82. (Previously Presented) An apparatus according to claim 81, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair, the apparatus further comprising:

means for encoding a plurality of aggregated data elements from a call attribute table representing the SSA data; and

means for delimiting information packet into an attribute data string and a value data string.

83. (Currently Amended) An apparatus for maintaining a call placed from a call-in user to a data communications network, the data communications network including a local server for servicing the call, and a backup server configured to service ~~capable of servicing~~ the call, the apparatus configured to couple ~~capable of coupling~~ the call to the data communications

network, the apparatus further configured to provide and providing a network connection to the local server, the apparatus comprising:

means for receiving an information packet from the local server, the information packet

associated with an ongoing call placed by the call-in user via the apparatus, the

information packet containing call information of the ongoing call for maintaining

connection of the ongoing call if the local server fails;

means for storing the information packet in a memory associated with the apparatus;

means for determining if a failure of the local server has occurred; and

means for transmitting the information packet from the associated memory to the backup

server via an information packet requester associated with the backup server if the local

server failure has occurred and the information is not available to the backup server.

84. (Previously Presented) An apparatus according to claim 83, wherein the call information comprises server-state attribute (SSA) data having an attribute/value pair that can be parsed into a plurality of separate data entries.

85. (Previously Presented) A backup server according to claim 1, wherein the call information comprises at least one of:

Dialed Number Information Service (DNIS) address;

call type;

Calling Line Identification (CLID); and

service accounting information.

86. (Cancelled)

87. (Previously Presented) A local server according to claim 9, wherein the call information comprises at least one of:

Dialed Number Information Service (DNIS) address;

call type;

Calling Line Identification (CLID); and

service accounting information.

88. (Previously Presented) A system according to claim 13, wherein the call information comprises at least one of:
Dialed Number Information Service (DNIS) address;
call type;
Calling Line Identification (CLID); and
service accounting information.
89. (Previously Presented) A NAS according to claim 17, wherein the call information comprises at least one of:
Dialed Number Information Service (DNIS) address;
call type;
Calling Line Identification (CLID); and
service accounting information.
90. (Previously Presented) A server backup system according to claim 20, wherein the call information comprises at least one of:
Dialed Number Information Service (DNIS) address;
call type;
Calling Line Identification (CLID); and
service accounting information.
91. (Previously Presented) A server backup system according to claim 30, wherein the call information comprises at least one of:
Dialed Number Information Service (DNIS) address;
call type;
Calling Line Identification (CLID); and
service accounting information.